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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,256	02/02/2004	Thomas E. Speer	030048104US	9618

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PERKINS COIE, LLP  
P.O. BOX 1247  
PATENT - SEA  
SEATT;E, WA 98111-1247

EXAMINER
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BEHNCKE, CHRISTINE M

ART UNIT	PAPER NUMBER
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3661

MAIL DATE	DELIVERY MODE
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05/21/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/770,256

Applicant(s)

SPEER, THOMAS E.

Examiner

Christine M. Behncke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 28-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 28-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____  |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :8/2/06; 6/14/05; 11/4/04; 6/4/04.

### **DETAILED ACTION**

1. This office action is in response to the Restriction Election and Remarks filed 23 February 2007, in which claims 28-43 were presented for examination.

#### ***Election/Restrictions***

2. Applicant's election without traverse of claims 28-43 in the reply filed on 23 February 2007 is acknowledged.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 28-30, 34, 35, and 37-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Gleine et al., US 5,875,998.

(**Claim 28**) Gleine et al. discloses a portion of a vehicle control system, comprising: at least one external fluid flow body having a forward portion with a first flow surface, a second flow surface facing opposite the first flow surface, and a trailing edge at a juncture of the first flow surface and the second flow surface, the trailing edge having a span extending from a first trailing edge tip to a second trailing edge tip (figures 2 and 8); a plurality of control surfaces, each having at least a portion aft of the trailing edge of the external fluid flow body, the control surfaces being movable relative to the at least one external fluid flow body to control forces and moments on the external fluid flow body by interacting with an adjacent flow field (figure 2, column 4,

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lines 13-27); and a plurality of actuator mechanisms, each having an approximately identical control capability, at least one actuator mechanism being coupled to each of the control surfaces to actively position the control surfaces in response to command signals (column 4, lines 13-41 and column 5, lines 25-57).

**(Claim 29)** Gleine et al. further discloses wherein the control surfaces are distributed across at least approximately the entire span of the trailing edge (figure 6).

**(Claim 30)** Gleine et al. further discloses wherein the control surfaces are installed on an aircraft and wherein at least one of the control surfaces can be positioned to cause the aircraft to roll, increase a drag of the aircraft, or both (figure 2, column 3, line 53-column 4, line 13).

**(Claim 34)** Gleine et al. further discloses wherein the actuator mechanisms each include a single actuator (column 7, lines 19-32).

**(Claim 35)** Gleine et al. further discloses wherein the actuator mechanisms each include at least two actuators (column 7, lines 19-32).

**(Claim 37)** Gleine et al. further discloses wherein at least one of the control surfaces is coupled to two actuator mechanisms (column 7, lines 19-32, figure 6).

**(Claims 38 and 39)** Gleine et al. further discloses wherein the at least one external fluid flow body includes a forward portion of a wing coupled to an aircraft (figure 2), the forward portion of the wing having a trailing edge, the span extending from a first trailing edge tip of the forward portion of the wing to a second trailing edge tip of the forward portion of the wing, and wherein the plurality of control surfaces are distributed

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across at least approximately the entire span (figure 2, column 4, lines 13-27, the disclosure inherently includes an non-shown left airfoil).

**(Claim 40)** Gleine et al. further discloses wherein the at least one external fluid flow body includes a forward portion of a wing coupled to an aircraft, the forward portion of the wing having a trailing edge, the span extending from a first trailing edge tip of the forward portion of the wing to a second trailing edge tip of the forward portion of the wing, and wherein the plurality of control surfaces are distributed across at least approximately the entire span (figures 2 and 6, column 4, lines 13-41).

**(Claim 41)** Gleine et al. discloses an aircraft, comprising: a fuselage; a forward wing portion, the forward wing portion having a leading edge and a trailing edge, the trailing edge of the forward wing portion having a span extending from a first trailing edge tip to a second trailing edge tip (figure 2, column 4, lines 13-27); a plurality of control surfaces, each having at least a portion positioned aft of the trailing edge, the control surfaces being distributed across at least approximately the entire span of the trailing edge, the control surfaces being movable relative to the forward wing portion to control forces and moments on the forward wing portion by interacting with an adjacent flow field (figures 4 and 6, column 6, lines 1-13); and a plurality of actuator mechanisms, each having an approximately identical control capability, each actuator mechanism being coupled to a control surface to actively position the corresponding control surface in response to command signals (column 4, lines 13-41 and column 5, lines 25-57).

**(Claim 42)** Gleine et al. further discloses wherein the span is noncontinuous and includes a first span portion extending from the first trailing edge tip to a first side of the

fuselage and a second span portion extending from a second side of the fuselage to a second trailing edge tip, and wherein the multiple control surfaces are distributed across at least approximately the entire first span portion and the entire second span portion (figure 2, column 4, lines 13-27, the disclosure inherently includes an non-shown left airfoil).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 31-33 and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gleine et al. in view of Wingett et al., US 7,007,897.

Gleine et al. discloses the system as applied to claim 28 above, but does not explicitly disclose controlling a maximum actuation rate and force. However, Wingett et al. teaches a flight control actuation system comprising a controller, electromechanical actuator and including a hydraulic actuator (Abstract, column 1, lines 28-33) further including control capability includes a maximum actuation rate and a maximum actuation force (figure 6, column 5, lines 55-column 6, line 47). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the system of Gleine et al. with the teachings of Wingett et al. because, as Wingett et al. suggests, it was well known in the art that the limits of the engine versus the maximum

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force being applied must be controlled to avoid stalling the actuator motors and damaging the actuator systems (column 6, lines 9-47).

***Claim Rejections - 35 USC § 103***

5. **Claims 43** is rejected under 35 U.S.C. 103(a) as being unpatentable over Gleine et al. in view of Wang, US 4,189,120.

Gleine et al. discloses the aircraft as applied in claim 41, but does not disclose a control surface being configured to change a physical characteristic of a slot. However, Wang teaches wherein the forward wing portion includes a forward portion of a supercritical airfoil, and wherein at least one of the control surfaces is coupled to the forward portion of the supercritical airfoil, the at least one control surface being configured to change a physical characteristic of a slot, defined by the forward portion of the supercritical airfoil and the at least one control surface, as the at least one control surface is actively positioned (figure 7, column 2, lines 14-22). It would have been obvious to one of ordinary skill in the art to combine the system of Gleine et al. with the teachings of Wang because, as Wang suggests, the advantages of the tapered leading edge flap is that in maintaining the flexible panels rectangular shape when proceeding spanwise outboard from a greater chord dimensioned flap panel member to one of a lesser chord dimension and making up for the discontinuity between the adjacent flap panel members through the use of tapered bullnose members, is that this permits the utilization of flap actuating linkage mechanisms which are sized the same or identically sized for each panel in order to provide for the commonality of the parts, thus is saving costs (column 2, lines 24-38).


**Conclusion**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine M. Behncke whose telephone number is (571) 272-8103. The examiner can normally be reached on 8:30 am- 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMB

  
**THOMAS BLACK**  
**SUPERVISORY PATENT EXAMINER**